FY 2013-2016 TRANSPORTATION IMPROVEMENT PROGRAM
CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ) FUNDS
NEW PROJECT APPLICATION

Clear Form and Create New Project | Retrieve Existing Project | Update/Save Project

PROJECT RECORD NUMBER 3237270 Clear All Fields

WRITE DOWN THE PROJECT NUMBER. YOU WILL NEED IT IF YOU WISH TO RETRIEVE / EDIT / PRINT THE PROJECT APPLICATION AT A LATER TIME.

Select one:

- ☐ In progress
- ☐ Preliminary complete (ready for comments)- Due February 24, 2012
- ☒ Final complete - Due March 23, 2012
  Signatures, Supplemental Information, and Application Fee - Due March 23, 2012

A. SPONSOR INFORMATION

Sponsoring Agency: CITY OF ST CHARLES

Chief Elected Official: MAYOR SALLY A FAITH

Address: 200 NORTH SECOND STREET

City: ST CHARLES **State:** MO **Zip:** 63301

Project Contact: KEVIN CORWIN, PE

Address: 200 NORTH SECOND STREET

City: ST CHARLES **State:** MO **Zip** 63301

Phone: 636-949-3513 **Fax:** 636-940-4601

E-mail: KEVIN.CORWIN@STCHARLESCITYMO.GOV

Application Contact: BRAD TEMME, PE

E-Mail: BRAD.TEMME@STCHARLESCITYMO.GOV **Phone:** 636-940-4617

B. PROJECT INFORMATION

Project Title: MUEGGE ROAD AT MEXICO ROAD INTERSECTION TRAFFIC FLOW IMPROVEMENTS

Project Limits (i.e., Taylor Ave to Moss St or over Moss Creek - include map.):

Muegge Road From Mexico Road to approximately 800 feet south of Mexico Road.

Is this project a continuation of, or is it otherwise related to, another project that previously was programmed in the TIP? If so, explain this relationship.

No.

Has your agency previously competed for funds for this specific project? If so, when?

No.

Does your agency own and maintain this facility? Yes **If no, a letter of support is required from the facility owner.**

Project Length (Miles): 0.15

Federal Functional Roadway Classification (per East-West Gateway): Principal Arterial <03>

(URL for functional classification maps: http://www.ewgateway.org/trans/funcclass/funcclass.htm)

Right of Way

Will additional right of way or easement be acquired?: Yes

If yes, give details below:

- **Estimated additional right of way (in acres) needed:** 0.25
- **Estimated permanent easements (in acres) needed:** 0.25
- **Estimated temporary easements (in acres) needed:** 0.25
- **Any residential or commercial displacements anticipated? If yes, give details on how many and if they are residential and/or commercial.**

No displacements will be necessary.

Right of way acquisition by: Local Agency

Right of way condemnation by: Local Agency

Utility Coordination

Will coordination with utilities be required? Yes **If yes, check the appropriate box to select the type of utility. Then give the names of the utility companies.**

Electric	✓	Ameren UE, Cuivre River Electric
Phone	✓	AT&T/SBC, Century Tel
Gas	✓	Laclede
Water	✓	City of St. Peters
Cable TV	✓	Charter Communications
Storm Sewer	✓	MoDOT
Sanitary Sewer	✓	City of St. Peters
Other		

Please give detail concerning potential utility conflicts / problems / issues:

At this time, details concerning potential utility conflicts, problems, or issues related to this project are undertermined. Utility coordination will be completed when preliminary design is underway.

Utility coordination completed by: Local Agency

Intelligent Transportation Systems (ITS) Architecture:
Projects must comply with the regional ITS standards as set forth in the document titled *Bi-State St. Louis Regional ITS Architecture*, April 2005

C. PROJECT JUSTIFICATION

Please describe 1.) the proposed improvement, 2.) the transportation problem the improvement will address, 3.) the effect the improvement will have on the problem.

Be as specific as possible. Attach additional sheets as needed.

This project will improve traffic flow at the intersection of Muegge Road and Mexico Road by widening the northbound approach along Muegge Road. The proposed lane configuations will be dual left turn lanes, a through lane, and one shared through/right turn lane resulting in the addition of a left turn lane from the existing lane configuration of a single left turn lane, a through lane, and a shared through/right turn lane. The project will also include reconstruction of an existing sidewalk.

The primary congestion problem with the Muegge Road at Mexico Road intersection is the need to service many conflicting high-volume movements resulting in poor levels of service (LOS) and long queues. In particular, northbound traffic from Muegge Road often takes several cycle lengths for vehicles to travel north of Mexico Road, especially during the weekday PM and Saturday mid-day peak hours. The northbound queue condition occurs due to the lack of capacity at the intersection. The northbound left-turn and through volumes share a lane which reduces the capacity of the approach and requires split signal phasing, limiting the efficiency of the signal.

The proposed northbound lane addresses the poor LOS and long queues present in the PM and midday Saturday peak hours. The analysis shows the additional northbound lane would improve the northbound approach LOS from an LOS F to LOS D and LOS E during the PM and midday Saturday peak hours, respectively. Delays during the PM and midday Saturday peak hours are reduced by over 50%. The existing long queues are reduced significantly as well, a reduction ranging from 400 feet to over 1,000 feet of queue. During the AM peak hour, an approximate 3% reduction in emissions occurs with the proposed improvement. The PM peak hour experiences an approximate 17% reduction and the midday Saturday peak hour has a reduction of approximately 10%.

Please refer to the appendix and data matrix attached to the application for more information.

Type of Project

Check the box(es) below that best describe the proposed improvement. More information can be found in Appendix A.

Transit

- ☐ System Startup
- ☐ Transfer Center
- ☐ Vehicle Replacement
- ☐ New Vehicle
- ☐ Park-and-Ride Facilities
- ☐ Other (specify): _____

Traffic Flow Improvements

- ☐ Traffic Signal Interconnect
- ☐ Traffic Signal Replacement
- ☐ New Traffic Signals
- ☐ Signal Controller Upgrades
- ☑ Intersection Improvements
- ☐ Roadway Bottleneck Elimination
- ☐ Other (specify): _____

Ride Share

- ☐ Rideshare Program
- ☐ Vanpool/Carpool Program
- ☐ Park-and-Ride Facilities
- ☐ Reverse Commute Program
- ☐ Other (specify): _____

Pedestrian and Bicycle Program

- ☐ Bicycle Parking Improvements
- ☐ Bicycle Lanes
- ☐ Pedestrian Ways
- ☐ Other (specify): _____

Demand Management

- ☐ Transportation Management Assoc.
- ☐ Transit Pass Subsidy
- ☐ Transit Information/Marketing
- ☐ Educational Program
- ☐ Other (specify): _____

Inspection Maintenance Program

- ☐ Roadside Emission Testing
- ☐ Enhanced I-M Program
- ☐ Mechanic Training Program
- ☐ Other (specify): _____

D. EMISSIONS DATA

Attach all applicable data identified in the Data Requirements Matrix (at the end of this application) for the type of project being proposed. Provide all information as completely as possible. Please contact East-West Gateway staff if any of the information requested is unclear or unavailable, or if there are questions concerning applicability. Additional project data may be submitted and is encouraged.

Note: **East-West Gateway staff will calculate the emission reduction(s).**

D. FINANCIAL PLAN

Please complete the following expenditure tables and attach a detailed cost estimate (an example is included in Appendix B of the workbooks).

Federal funds must not exceed 80% of the total cost. Fiscal years are federal fiscal years (October 1 through September 30). In Illinois, federal funds are available for FY 2013. In Missouri, federal funds are available for FY 2013 and FY 2014.

PROJECT BUDGET	FY 2013	FY 2014	FY	TOTAL
PE/Planning/ Environ. Studies	60000.00	0.00		60000.00
Right-Of-Way		75000.00		75000.00
Implementation	0.00	390755.00		390755.00
Construction Engineering	0.00	19245.00		19245.00
Implementation Total	0.00	410000.00	0.00	410000.00
PHASE TOTAL	60000.00	485000.00	0.00	545000.00

SOURCE OF FUNDS	FY 2013	FY 2014	FY	TOTAL
CMAQ Funds	48000.00	388000.00		436000.00
Other Fed. Funds *Source:*	0.00	0.00		0.00
Other State Funds *Source:*	0.00	0.00		0.00
Local Match Funds *Source:* City Funds	12000.00	97000.00		109000.00
Other Funds *Source:*	0.00	0.00		0.00
TOTAL	60000.00	485000.00	0.00	545000.00

Standard TIP Project Development Schedule Form (many stages can occur concurrently)

Activity Description	Start Date (MM/YYYY)	Finish Date (MM/YYYY)	Time Frame (Months)
Receive Notification Letter	07/2012	08/2012	1.0
Execute Agreement (Project sponsor & DOT)	08/2012	10/2012	3.0
Engineering Services Contract Submitted & Approved [1]	10/2012	01/2013	3.0
Obtain Environmental Clearances (106, CE-2, etc.)	01/2013	05/2013	4.0
Public Meeting/Hearing	05/2013	05/2013	1.0
Develop and Submit Preliminary Plans	01/2013	05/2013	4.0
Preliminary Plans Approved	05/2013	06/2013	1.0
Develop and Submit Right-of-Way Plans	06/2013	08/2013	2.0
Review and Approval of Right-of-Way Plans	08/2013	09/2013	1.0
Submit & Receive Approval for Notice to Proceed for Right-of-Way Acquisition (A-Date) [2]	08/2013	09/2013	1.0
Right-of-Way Acquisition	10/2013	07/2014	9.0
Utility Coordination	01/2013	08/2014	20.0
Develop and Submit PS&E	09/2013	07/2014	10.0
District Approval of PS&E/Advertise for Bids [3]	07/2014	09/2014	2.0
Submit and Receive Bids for Review and Approval	09/2014	11/2014	2.0
Project Implementation/Construction	11/2014	05/2015	6.0

1. Preliminary engineering obligated.
2. Right of way obligated.
3. Construction/implementation funds obligated.

Financial Certification of Matching Funds

This is to assure sufficient funds are available to pay the non-federal share of project expenditures for the following projects to be funded under the provisions of SAFETEA-LU. Only one certification per sponsoring agency is necessary.

Project Title	**Non-federal Amount**
MUEGGE ROAD AT MEXICO ROAD INTERSECTION TRAFFIC FLOW IMPROVEMENT	109000.00

Sponsoring Agency: CITY OF ST CHARLES

Chief Elected Official (or Chief Executive Officer):

Name (Print): Mayor Sally A Faith

Signature: Sally A Faith

Date: 3/20/12

Attest:

City Clerk

Chief Financial Officer:

Name (Print): Kelly Vaughn

Signature: Kelly L Vaughn

Date: 3-20-12

E. Person of Responsible Charge Certification

The key regulatory provision, 23 CFR 635.105 – *Supervising Agency,* provides that the State Transportation Agency (STA) is responsible for construction of Federal-aid projects, whether it or a local public agency (LPA) performs the work. The regulation provides that the STA and LPA must provide its full-time employee to be in "responsible charge" of the project.

The undersigned employees(s) of the Project Sponsor will act as person of responsible charge. If at any point the employee leaves the LPA, the LPA is responsible for finding a suitable replacement and notifying East-West Gateway. If the person of responsible charge is found to not be a full-time employee of the LPA, it will result in the loss of federal funds for this project. One employee can act as person of responsible charge for all three phases.

Person of responsible charge – design phase

Name: Brad Temme, PE

Signature: _____

Person of responsible charge – right of way acquisition phase

Name: Brian Faust, IFAS

Signature: _____

Person of responsible charge – construction phase

Name: Stephen Noonan, PE

Signature: _____

F. Title VI Certification

The Project Sponsor shall comply with all state and federal statutes relating to nondiscrimination, including but not limited to Title VI and Title VII of the Civil Rights Act of 1964, as amended (42 U.S.C. §2000d and §2000e, et seq.), as well as any applicable titles of the "Americans with Disabilities Act" (42 U.S.C. §12101, et seq.). In addition, if the Grantee is providing services or operating programs on behalf of the Department or the Commission, it shall comply with all applicable provisions of Title II of the "Americans with Disabilities Act".

The undersigned representative of the Project Sponsor hereby certifies that he/she has policies and procedures in place to comply with Title VI of the Civil Rights Act of 1964.

Name of Title VI Coordinator Michael Valenti

Title VI Coordinator Signature 

G. Right-of-Way Acquisition

To be completed by Missouri project sponsors only.

The Missouri Department of Transportation (MoDOT) and the Federal Highway Administration (FHWA) have the right and responsibility to review and monitor the acquisition procedures of any federally funded transportation project for adherence to The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970." Those projects found in non-compliance may jeopardize all or part of their federal funding.

A. The Project Sponsor hereby certifies that ANY right of way, and/or permanent or temporary easements necessary for this project, obtained prior to this application, were acquired in accordance with The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

B. The Project Sponsor also certifies that any additional right of way, and/or permanent or temporary easements, subsequently required to complete the project, will be acquired according to The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

City of St. Charles, Missouri

Sally A. Faith 3/20/12

Sally A. Faith, Mayor

Certification Signature

Attest:

City Clerk

H. Reasonable Progress

To be completed by Missouri project sponsors only.

Attached is a copy of the resonable progress policy adopted by the East-West Gateway COG Board of Directors.

The undersigned representative of the Project Sponsor hereby certifies that he/she has read this policy and understands its requirements. The representative acknowledges that failure to meet all of the reasonable progress requirements could result in federal funds being revoked and returned to the regional funding pool, as dictated by the policy.

City of St. Charles, Missouri

Certification Signature: Sally A. Faith 3/20/12

Sally A. Faith, Mayor

Attest:

City Clerk

EAST-WEST GATEWAY
Council of Governments
Creating Solutions Across Jurisdictional Boundaries

Policy on Reasonable Progress

Reasonable Progress

For projects or programs included in the Transportation Improvement Program, "reasonable progress" will have been made if the project has advanced to the point of obligating all federal funds programmed for that project in the current fiscal year, regardless of the phase of work (i.e., Preliminary Engineering (PE), Right of Way Acquisition (ROW), or Plans Specifications and Estimates (PSE)/Construction). If a project fails to obligate the programmed federal funds by September 30 of the current year, the funding will be forfeited and returned to the regional funding pot. Actual progress toward implementation is measured against the schedule submitted by the project sponsor in the project application.

Policy Procedures and Enforcement

Projects that do not obligate all federal funds by the September 30 suspense date will be removed from the TIP, and the federal funds associated with those projects will be returned to the regional funding pool for redistribution. The removal of projects from the TIP will require no further Board action and the sponsor would have to repay any federal funds already spent if the funding is forfeited.

If a project is realizing delays that will put the federal funding at risk of forfeiture (i.e., not meet a September 30 deadline), the project sponsor will have the opportunity to ask for consideration of a "one-time extension" in their project schedule. The one-time extension can only be requested for the implementation/construction phase of the project. The extension request will only be considered once a year, and has to be made before June 1 of the current fiscal year of the TIP.

To be considered for this extension the sponsor has to demonstrate on all counts: a.) The delay is beyond their control and the sponsor has done diligence in progressing the project; b.) Federal funds have already been obligated on the project or in cases that no federal funds are used for PE and/or ROW acquisition, there has been significant progress toward final plan preparation; c.) There is a realistic strategy is in place to obligate all funds.

One-time extensions of up to three (3) months may be granted by East-West Gateway staff and one-time extensions greater than three (3) months, but not more than nine (9) months, will go to the Board of Directors for their consideration and approval. Projects requesting schedule advancements will be handled on a case-by-case basis(subject to available funding) and are subject to the Board adopted rules for TIP modifications.

EAST-WEST GATEWAY
Council of Governments
Creating Solutions Across Jurisdictional Boundaries

Policy on Reasonable Progress

Project Monitoring

An extensive monitoring program has been developed to help track programmed projects and ensure that funding commitments and plans are met. Monthly reports are developed and posted on the East-West Gateway website, utilizing project information provided by the IDOT and MoDOT District offices. Additionally, project sponsors are contacted, at least every three months, by EWGCOG staff for project status interviews.

Data Requirements Matrix

	Contact Gateway Staff for Details	Annual Miles per Vehicle	Auto Access Trip Length	Auto Trips Diverted per Day	Auto Trips Eliminated per Day	Average Age of Fleet	Average Number of Miles Driven	Capacity (after)	Capacity (present)	Deadhead Factor	Eligible Riders	g/bhp-hr (after)	g/bhp-hr (present)	Hours of operation (daily)	Number of Vehicles	Occupancy Rate (after)	Occupancy Rate (present)	Route Length
Transit Improvements																		
System Start Up				X	X			X	X	X		X	X	X	X	X	X	X
Transfer Center			X	X	X			X	X							X	X	
Vehicle Replacement		X				X		X	X	X		X	X	X	X	X	X	X
New Vehicle								X	X	X		X	X	X	X	X	X	X
Park-Ride Facilities			X	X	X			X	X							X	X	
Feeder System			X	X	X	X		X	X	X				X	X	X	X	X
Other	X																	
Shared Ride Services																		
Rideshare Programs				X	X		X				X					X	X	
Vanpool/carpool Programs				X	X		X				X					X	X	
Reverse Commute Program				X	X		X				X					X	X	
Park-Ride Facilities			X	X	X			X	X							X	X	
Other	X																	
Demand Management Strategies																		
Transportation Mgt Assoc	X																	
Transit Pass Subsidy	X																	
Transit Information/Marketing	X																	
Educational Programs	X																	
Other	X																	

Data Requirements Matrix

(continued)

	Contact Gateway Staff for Details	Auto Trips Diverted per Day	Auto Trips Eliminated per Day	Average Delay per vehicle (after)	Average Delay per vehicle (present)	Avg Daily Traffic (after)	Avg Daily Traffic (present)	Capacity (after)	Capacity (present)	Households Affected	Posted Speed Limit	Project Length	Speed (after)	Speed (present)	Trips per Household	Usage (after)	Usage (present)
Traffic Flow Improvements																	
Traffic Signal Interconnect				X	X	X	X				X	X	X	X			
Traffic Signal Replacement				X	X	X	X				X	X	X	X			
New Traffic Signals				X	X	X	X				X	X	X	X			
Signal Controller Upgrades				X	X	X	X				X	X	X	X			
Intersection Improvements				X	X	X	X				X	X	X	X			
Roadway Bottleneck Elimination				X	X	X	X				X	X	X	X			
ITS	X																
Other	X																
Pedestrian & Bicycle Improvement																	
Bicycle Parking Improvements		X	X									X				X	X
Bicycle Lanes		X	X									X				X	X
Pedestrian Ways		X	X							X		X				X	X
Education Program		X	X							X					X		
Other	X																
Inspection Maintenance																	
Roadside Emission Testing	X																
Enhanced I-M Program	X																
Mechanic Training Program	X																
Other	X																

B. Project Information

Project Location

The project limits are Muegge Road at the signalized intersection with Mexico Road in Saint Charles, Missouri, a distance of approximately 750 feet. The location of the proposed improvements is shown in **Figure 1**.

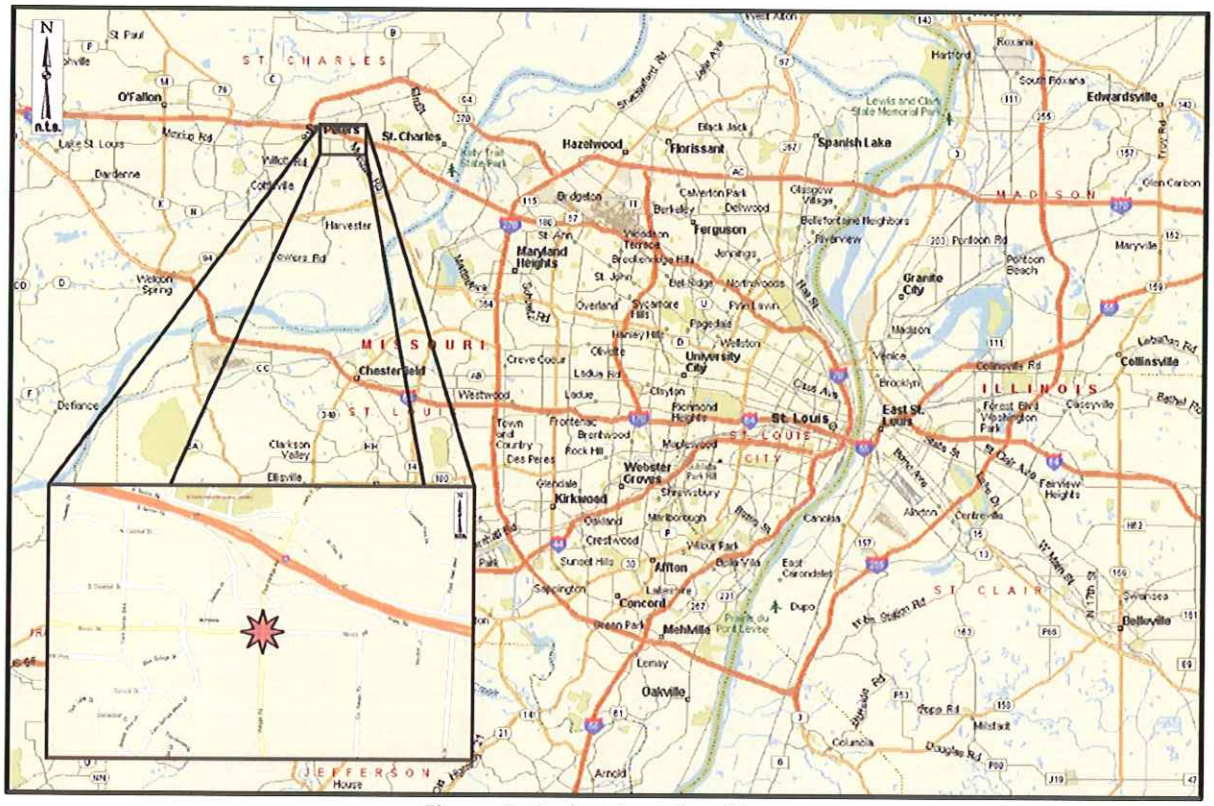

Figure 1: Project Location Map

C. Project Justification

1. Proposed Improvements

The proposed improvement being considered in this application to improve the congested intersection of Muegge Road at Mexico Road in St. Charles, Missouri is the widening of the northbound approach of Muegge Road. The widening will modify the existing lane configuration of a left-turn lane, shared left-turn/thru lane and a thru/right-turn lane to dual left-turn lanes, a through lane and a shared thru/right-turn lane. The proposed improvements are illustrated in **Exhibit 1**.

Exhibit 1: Proposed Northbound Lane Improvement

Job# 015-12
03/14/12

CBB Crawford, Bunte, Brammeier
Traffic and Transportation Engineers

2. The Transportation Problem the Improvement Will Address

The primary congestion problem with the Muegge Road at Mexico Road intersection is the need to service many conflicting high-volume movements resulting in poor levels of service (LOS) and long queues. Existing traffic volumes are shown in **Figure 2**.

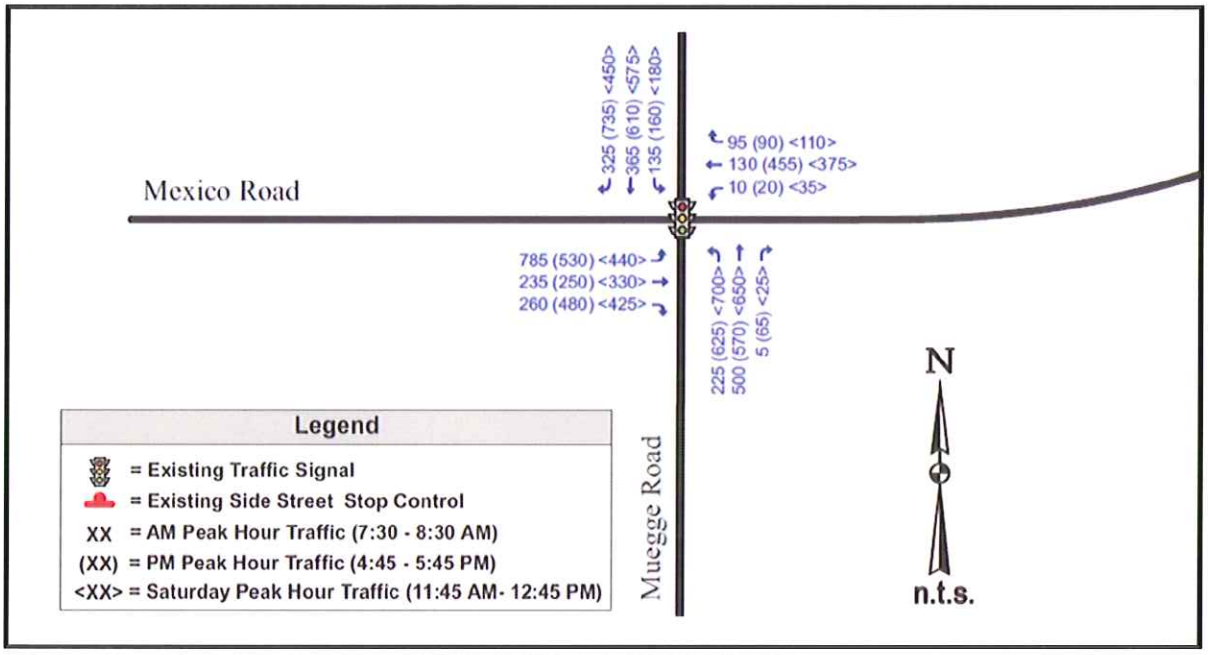

Figure 2: Existing Traffic Volumes

Muegge Road is a north-south arterial that provides access to Truman Road, Cave Springs Interchange and Mexico Road to the north and Old Highway 94 and Route 364 to the south. Mexico Road is an east-west arterial from Veterans Memorial Parkway, east of the Cave Springs Interchange, to Bryan Road, approximately 10 miles west.

During the AM peak hour, eastbound left-turn traffic from Mexico Road's destination is the eastbound I-70 on-ramp. As it can be seen this movement develops long queues as shown in **Figure 3**.

The northbound traffic from Muegge Road, shown in **Figure 4**, queues past the commercial developments along Muegge Road and takes several cycle lengths for vehicles to travel north of Mexico Road. This condition occurs during the PM peak hour and the Saturday midday peak hour.

The northbound queue condition occurs due to the lack of capacity at the intersection. The northbound left-turn and through volumes share a lane which reduces the capacity of the approach. In addition, due to a shared lane the signalization is required to be split phasing that reduces the efficiency of the signal.

Figure 3: Eastbound Mexico Road at Muegge Raod (AM Peak Hour)

Figure 4: Northbound Muegge Road at Mexico Road (PM Peak Hour)

SYNCHRO and VISSIM Analysis of Existing Conditions

As part of the City of St. Charles ***Congestion Reduction Study - I-70 Zumbehl & Cave Springs Interchanges***, the intersection of Muegge Road at Mexico Road was evaluated with SYNCHRO and VISSIM to quantify roadway operations. The SYNCHRO and VISSIM traffic evaluation packages were used in the analysis to capitalize on the strengths of each tool and to compare the results of the analysis packages.

Operating conditions were graded in accordance with six levels of traffic service (Level A "Free Flow" to Level F "Fully Saturated") established by the Highway Capacity Manual. Levels of service (LOS) are

measures of traffic flow which consider speed, delay, traffic interruptions, safety, driver comfort, and convenience. Level C, which is normally used for design, represents a roadway with volumes ranging from 70% to 80% of its capacity. Typically Level D is generally considered acceptable for peak periods in urban and suburban areas for both freeways and arterial roadways.

Several Measures of Effectiveness (MOE) were used in this evaluation including: LOS, volume to capacity ratios (v/c), vehicular delay, density, travel speed, and queue lengths. LOS is directly related to control delay. **Table 1** summarizes the LOS thresholds used in the analysis for intersections.

Table 1: Intersection Level of Service Thresholds

Level of Service (LOS)	Control Delay per Vehicle (seconds/vehicle) Signalized Intersections
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

The analysis is based on existing traffic conditions because the congestion experienced at the intersection is a current condition. The existing intersection operation analysis results from SYNCHRO and VISSIM for the intersection of Muegge Road with Mexico Road are shown in **Table 2** and **Table 3**, respectively.

As seen in the tables, the northbound approach has a LOS F during PM and Saturday peak hours. V/C ratios show that the approach is over capacity with v/c ratios over 1.0. Both Synchro and VISSM show queues range from 850 feet to 1,700 feet during the PM and Saturday peak hours.

Table 2: Intersection Measures of Effectiveness (Synchro)

CORRIDORS AND INTERSECTIONS	Existing Conditions			Build Conditions			Difference					
							AM		PM		SAT	
	AM	PM	SAT	AM	PM	SAT	Delta	Percent	Delta	Percent	Delta	Percent
Eastbound Approach												
LOS	C	E	D	C	E	D	-	-	-	-	-	-
Delay (sec/veh)	28.7	64.6	44.2	28.7	62.1	44	0.0	0.0%	-2.5	-3.9%	-0.2	-0.5%
Max v/c	0.9	1.1	0.9	0.9	1.1	0.9	0.0	0.0%	0.0	-0.9%	0.0	-1.1%
95th % Queue	469	479	492	469	479	492	0.0	0.0%	0.0	0.0%	0.0	0.0%
Westbound Approach												
LOS	C	F	F	C	F	F	-	-	-	-	-	-
Delay (sec/veh)	28.5	188.5	140.7	28.8	188.5	140.9	0.3	1.1%	0.0	0.0%	0.2	0.1%
Max v/c	0.6	1.3	1.2	0.6	1.3	1.2	0.0	0.0%	0.0	0.0%	0.0	0.0%
95th % Queue	97	488	427	96	488	427	-1.0	-1.0%	0.0	0.0%	0.0	0.0%
Northbound Approach												
LOS	F	F	F	F	D	E	-	-	-	-	-	-
Delay (sec/veh)	193.7	195.4	215.8	80.1	50.2	59.5	-113.6	-58.6%	-145.2	-74.3%	-156.3	-72.4%
Max v/c	1.2	1.3	1.3	1.0	0.9	1.0	-0.2	-16.1%	-0.4	-31.3%	-0.3	-23.5%
95th % Queue	415	856	951	337	449	527	-78	-18.8%	-407	-47.5%	-424	-44.6%
Southbound Approach												
LOS	E	F	F	D	F	F	-	-	-	-	-	-
Delay (sec/veh)	59.5	136.2	168.2	43	136.3	153.5	-16.5	27.7%	0.1	0.1%	-14.7	-8.7%
Max v/c	1.1	1.0	1.0	0.9	1.0	0.9	-0.2	-19.3%	0.0	0.0%	-0.1	-9.2%
95th % Queue	300	484	473	247	484	434	-53	-17.7%	0.0	0.0%	-39	-8.2%
Overall Intersection												
LOS	E	F	F	D	F	F	-	-	-	-	-	-
Delay (sec/veh)	79.8	138.4	147	45.9	98.1	91.6	-33.9	-42.5%	-40.3	-29.1%	-55.4	-37.7%
Max v/c	1.2	1.3	1.3	1.0	1.3	1.2	-0.2	-16.1%	0.0	-2.2%	-0.1	-9.8%
95th % Queue	469	856	951	469	488	527	0.0	0.0%	-368	-43.0%	-424	-44.6%

Table 3: Intersection Measures of Effectiveness (VISSIM)

CORRIDORS AND INTERSECTIONS	Existing Conditions			Build Conditions			Difference					
							AM		PM		SAT	
	AM	PM	SAT	AM	PM	SAT	Delta	Percent	Delta	Percent	Delta	Percent
Eastbound Approach												
LOS	C	D	D	C	D	D	-	-	-	-	-	-
Delay (sec/veh)	23.5	41.4	41.1	21.1	36.2	39.3	-2.3	-10.0%	-5.2	-12.6%	-1.8	-4.4%
Average Queue	116	180	174	103	160	163	-13	-10.8%	-20	-11.2%	-11	-6.4%
Max. Queue	431	537	520	414	521	514	-17	-4.1%	-16	-3.0%	-6	-1.3%
Westbound Approach												
LOS	C	F	F	C	F	F	-	-	-	-	-	-
Delay (sec/veh)	34.1	124.1	89.7	34.6	125.0	92.6	0.5	1.4%	0.9	0.8%	2.8	3.2%
Average Queue	34	394	200	33	389	216	-1	-0.3%	-5	-1.3%	16	7.5%
Max. Queue	164	924	569	163	943	529	-1	-0.4%	19	2.1%	-40	-7.0%
Northbound Approach												
LOS	D	F	F	D	D	E	-	-	-	-	-	-
Delay (sec/veh)	43.4	112.8	115.1	39.8	46.4	55.7	-3.6	-8.2%	-66.3	-58.8%	-59.4	-51.6%
Average Queue	108	1333	1497	90	157	226	-18	-16.6%	-1176	-88.2%	-1271	-84.9%
Max. Queue	385	1701	1701	339	548	708	-46	-11.9%	-1153	-67.8%	-993	-58.3%
Southbound Approach												
LOS	C	C	C	C	C	C	-	-	-	-	-	-
Delay (sec/veh)	25.6	21.0	28.1	26.9	23.6	32.2	1.3	5.0%	2.5	12.1%	4.2	14.8%
Average Queue	81	125	177	84	147	195	3	4.2%	22	17.4%	18	10.4%
Max. Queue	305	346	372	281	360	369	-24	-7.7%	14	4.0%	3	-0.8%
Overall Intersection												
LOS	C	E	E	C	D	D	-	-	-	-	-	-
Delay (sec/veh)	29.6	64.4	64.0	28.2	46.5	49.4	-1.4%	-4.8%	-17.9	-27.8%	-14.6	-22.8%

3. The Effect the Improvement Will Have on the Problem

The proposed northbound lane addresses the poor LOS and long queues present in the PM and midday Saturday peak hours. The proposed improvement operation analysis results from SYNCHRO and VISSIM for the intersection of Muegge Road with Mexico Road are shown in **Table 2** and **Table 3**, respectively.

The analysis shows the additional northbound lane would improve the northbound approach LOS from an LOS F to LOS D and LOS E during the PM and midday Saturday peak hours, respectively.

Delays during the PM and midday Saturday peak hours are reduced by over 50%. The existing long queues are reduced significantly as well, a reduction ranging from 400 feet to over 1,000 feet of queue.

Measures of Effectiveness

Measures of effectiveness collected through the VISSIM simulations include average delay per vehicle, number of stops, and average vehicle speed. Measures of effectiveness were collected for the Cave Springs Interchange corridor as a whole. This can show how the addition of a northbound lane at the intersection affects the overall operations at the Cave Springs Interchange corridor. A complete listing of measures of effectiveness throughout the project area is provided in **Table 4**.

As seen in the tables, the Build Network is expected to operate with lower average delay and stops per vehicle on a network-wide basis during the PM peak hour, which is when the northbound approach has the highest existing delays and queues.

Intersection Emissions

In addition, intersection emissions were collected through VISSIM for the intersection of Muegge Road with Mexico Road as shown in **Table 5**. The emissions recorded were CO, NOx, VOS and fuel consumption.

During the AM peak hour, an approximate 3% reduction in emissions occurs with the proposed improvement. The PM peak hour experiences an approximate 17% reduction and the midday Saturday peak hour has a reduction of approximately 10%.

Table 4: Network Measures of Effectiveness

NETWORK PERFORMANCE	Existing Conditions			Build Conditions			Difference					
							AM		PM		SAT	
	AM	PM	SAT	AM	PM	SAT	Delta	Percent	Delta	Percent	Delta	Percent
Average Speed (mph)	52.4	31.1	36.7	52.5	32.2	36.3	0.0	0.1%	1.1	3.7%	-0.4	-1.1%
Average Delay per vehicle (s)	43.6	215.3	136.2	43.3	199.5	137.9	-0.3	-0.7%	-15.8	-7.4%	1.7	1.2%
Average Number of Stops per Vehicle	0.8	5.5	2.7	0.8	4.9	3.0	0.0	0.1%	-0.4	-7.2%	0.3	10.8%

Table 5: Intersection Measures of Effectiveness (VISSIM)

Intersection Emmissions	Existing Conditions			Build Conditions			Difference					
							AM		PM		SAT	
	AM	PM	SAT	AM	PM	SAT	Delta	Percent	Delta	Percent	Delta	Percent
Emission CO	4675.6	10160.5	9555.8	4538.1	8405.5	8597.8	-137.5	-2.9%	-1755.0	-17.3%	-958.0	-10.0%
Emission NOx	909.7	1976.9	1859.2	883.0	1635.4	1672.4	-26.7	-2.9%	-341.5	-17.3%	-186.4	-10.0%
Emission VOC	1083.6	2354.8	2214.6	1051.8	1948.1	1992.6	-31.9	-2.9%	-406.7	-17.3%	-222.0	-10.0%
Fuel Consumption	66.9	145.4	136.7	64.9	120.3	1123.0	-2.0	-2.9%	-25.1	-17.3%	-13.7	-10.0%

D. Financial Plan

Estimation of Cost

A project cost estimate is included in **Table 6**. Cost estimation considered all elements of necessary work (e.g., Pavement, Grading, Structural Elements, and Traffic Control) as well as contingency for engineering.

Costs include additional Right-of-Way for a northbound bike lane along Muegge Road per the Great River Greenway Saint Louis Bike Plan.

Table 6: Estimation of Project Costs

Construction Cost Estimate		Cost
PCC Pavement		$140,000
Curbs		$23,250
Commercial Entrances		$36,000
Sidewalk/Trail		$28,275
Retaining Wall		$4,800
Curb Ramps		$9,000
Pavement Markings		$5,000
Converted Inlet to Manhole		$4,500
Sewers		$7,500
15" RCP		$3,375
Remove & Relocated Signs		$10,000
Removal of Improvements		$15,000
Traffic Signal Modifications		$25,000
Traffic Control		$8,500
	Construction Subtotal	$320,200
	Construction Contingency (10%)	$32,020
	Inflation (3% for 3 years)	$33,660
	Construction Management	$19,245
	Construction Total	***$404,125***
	Rounded Construction Total	**$410,000**
	Engineering Total	60,000
	Right of Way (ROW) Total	75,000
	Total Project Cost	**545,000**

Data Requirements Matrix

Types of Improvements Proposed

Traffic Flow Improvements consisting of Intersection Improvements

Posted Speed Limits

Table 7: Posted Speed Limits

Roadway	Posted Speed Limit (miles per hour)
Muegge Road	35
Mexico Road	35

Speeds (present)

- Muegge Road: Northbound Approach Average Speed – 16 mph

Speeds (after)

- Muegge Road: Northbound Approach Average Speed – 26 mph

Project Length

- Approximately 0.15 miles

Average Daily Traffic (ADT)

- The improvements discussed in this application were evaluated for existing conditions. Average daily traffic for the study area is not expected to change.
    - Present (No Build):
        - Muegge Road: 18,000 ADT
        - Mexico Road (east of Muegge Road): 8,300 ADT
        - Mexico Road (west of Muegge Road): 30,500 ADT
    - After (Build):
        - Muegge Road: 18,000 ADT
        - Mexico Road (east of Muegge Road): 8,300 ADT
        - Mexico Road (west of Muegge Road): 30,500 ADT

LEN PAGANO
MAYOR
CITY OF ST. PETERS, MO
(636) 477-6600

March 22, 2012

Brad Temme, P.E.
Project Manager
City of St. Charles Public Works
200 N Second Street
St. Charles, MO 63301

RE: Muegge Road at Mexico Road Intersection Improvements
Proposed 2013-2014 CMAQ Application

Mr. Temme:

The City of St. Peters has long been an advocate of projects that improve the safety and efficiently of transportation systems not only within St. Peters, but throughout the St. Charles region. Therefore, the City of St. Peters supports the efforts of the City of St. Charles to obtain Congestion Mitigation and Air Quality funds for the proposed improvements to Muegge Road, at the intersection of Mexico Road. The additional lane created by your project will allow the intersection at Mexico Road and Muegge to function more efficiently and reduce travel delay.

We recognize that this project will also provide the opportunity to improve traffic flow and reduce congestion at the Cave Springs Interchange and is complementary to our efforts to improve access to Interstate 70 thorough a proposed modification to the interchange and outer road system. For these reasons, we support your application.

Sincerely,

Len Pagano
Mayor
City of St. Peters, Missouri

cc: William P. Charnisky, City Administrator
Russ Batzel, P.E., Manager/TDS

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March 19, 2012

Kevin Corwin
City Engineer
City of St. Charles
200 N. Second Street
St. Charles, MO 63301

Dear Kevin:

Please accept this letter of support for the City of St. Charles' Muegge Road at Mexico Road Traffic Improvements Project. This is clearly a project that will provide numerous benefits for our community and region.

This project not only addresses much needed infrastructure improvements for the city, it will create an environment that will foster community development and job creation.

The Mexico Road Traffic Improvements Project will reduce congestion and improve access within the community along a vital corridor, reduce pollution, and create safer transportation options for everyone traveling through St. Charles.

I look forward to continuing to work with you and other key partners to insure an improved transportation system is in place to provide long-term benefits for our region.

Sincerely,

Tom Dempsey

TD/kd

Committees:
Rules, Joint Rules, Resolutions and Ethics, Chair
Gubernatorial Appointments, Vice-Chair
Administration, Vice-Chair